

**Notice of Allowability**

Application No.

09/634,434

Examiner

Rob Rhode

Applicant(s)

STARK ET AL.

Art Unit

3625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment recieved 11/28/05.
2. ☒ The allowed claim(s) is/are 1 - 5, 7 - 58 and 60 - 76.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

## **DETAILED ACTION**

### **Response to Amendment**

Response that was received on 11-28-05 is acknowledged and noted that Applicant traversed the rejection and amended claims 1 and 33 as well as canceled claims 6, 59 and 77 - 120.

Currently, claims 1 – 5, 7 – 58 and 60 - 76 have been examined and are allowed.

### **In the claims**

The claims have been amended as follows:

1. (currently amended) A method for managing internal components of nuclear reactor plants using a network-based system including a server system coupled to a centralized interactive database and at least one client system, said method comprising the steps of:

- receiving information relating to internal components of a specific plant;
- storing the information into a centralized database;
- updating the centralized database with information received',
- cross-referencing the information received against the specific plant;
- developing inspection recommendations for specific internal components based on information received and information stored in the database;

determining cracking susceptibility for specific internal ~~components~~ component welds based on information received and information stored in the database, wherein the cracking susceptibility determination is based on a base material of the internal component, a weld filler material, and a weld susceptibility index based on a configuration of a weld and historical information of similar internal components in similar reactors;

developing contingency options for repair or mitigation of specific internal components based on the cracking susceptibility of specific ~~components~~ component welds;

generating contingency outage schedules for the contingency options; and  
providing information in response to an inquiry.

33. (currently amended) A network-based system for managing assets, said system comprising:

- a client system comprising a browser,
- a data storage device for storing information;
- a server system configured to be coupled to said client system and said database, said server system further configured to:
  - receive information relating to internal components of a specific plant;
  - store the information into a centralized database;
  - update the centralized database with information received;
  - cross-reference the information received against the specific plant;

Art Unit: 3625

develop inspection recommendations for specific internal components based on information received and information stored in the database;

determining cracking susceptibility for specific internal ~~components~~ component welds based in information received and information stored in the database, wherein the cracking susceptibility determination is based on a base material of the internal component, a weld filler material, and a weld susceptibility index based on a configuration of a weld and historical information of similar internal components in similar reactors;

developing contingency options for repair or mitigation of specific internal components based on the cracking susceptibility of specific ~~components~~ component welds;

generate contingency outage schedules for the contingency options', and provide information in response to an inquiry.

### **Reasons for Allowance**

The invention claimed in the independent claims 1 and 33 are distinguished from prior art of record, which contains no teachings or suggestions that would have motivated one of ordinary skill in the art to modify the method and system disclosed by Palusamy with the method and system of Palusamy (hereafter refereed to as Palusamy 2) to have enabled a method and system for the subject matter recited in independent claims 1 and 33. To begin with, Palusamy discloses a method and system for an integrated information system is provided for a plant with interactive processes running in

functional equipment subsets, such as a nuclear power generation plant. Sensors are operatively coupled to monitor processes and equipment in the plant, collecting sample data for assessing operational conditions and for predicting maintenance requirements based on loading of the equipment. One or more processors access the sample data and compares present conditions to diagnostic specifications, technical specifications and historical data stored in memory and indexed to equipment subsets and functional operating groups. The processor(s) generate prioritized reports to alert users to potential operational and/or maintenance problems. In addition to the prioritized reports, the processor accesses and outputs to the users reports of the diagnostic and technical specifications applicable to the process parameters exhibiting the potential problems. These specifications are provided in successive levels of detail and are cross-referenced between related processes and related items of equipment. The information system integrates operations, maintenance, engineering and management interests in a common database of information via network-coupled data terminals. In turn, Palusamy 2, in the same area of monitoring and accessing plant components via sensors, discloses a cycle monitoring system and method that acquires, logs and analyzes analog and/or digital signals from component sensors in a process control plant such as a nuclear power plant, whereby the system continuously monitors the sensors and records steady state and transient phenomena. Compression of the data is performed to reduce storage load. The compression ratio for transient data is driven by a threshold indicating a measurement significant to stress determination. Transient data is retained at a higher sampling rate, so that the parameters of transient such as the maximum

value can be determined for stress analysis. The stress analysis determines pressure and thermal stresses which are used to calculate a usage factor which indicates the stress age and thus the remaining life of a component. The system provides estimates of fatigue accumulation associated with selected locations of critical power plant components. Measurements of plant process and response parameters are used to provide data for calculation of fatigue accumulation. The system includes a computer containing a database that includes thresholds and response characteristics of the plant components to varying types of stress. The system can be used to plan routine maintenance, repair and replacement decision, and to justify alternative plant operation modes and life extension. However, Palusamy and Palusamy 2 do not disclose or would have suggested to one of ordinary skill in the art a method and system for determining cracking susceptibility for specific internal component welds based in information received and information stored in the database, wherein the cracking susceptibility determination is based on a base material of the internal component, a weld filler material, and a weld susceptibility index based on a configuration of a weld and historical information of similar internal components in similar reactors. Therefore, Palusamy does not teach or would have suggested to one of ordinary skill in combination with Palusamy 2 a method and system for managing internal components of nuclear reactor plants using a network-based system including a server system coupled to a centralized interactive database and at least one client system, comprising; **determining cracking susceptibility for specific internal component welds based in information received and information stored in the database, wherein the**

**cracking susceptibility determination is based on a base material of the internal component, a weld filler material, and a weld susceptibility index based on a configuration of a weld and historical information of similar internal components in similar reactors.**

Discussion of the most relevant prior art, which does not fully disclose nor render obvious the invention as stated in claim 1 and 33:

**A. US Patents and PG-Pubs.**

(i) US 5,311,562 to Palusamy discloses a method and system for an integrated information system is provided for a plant with interactive processes running in functional equipment subsets, such as a nuclear power generation plant. Sensors are operatively coupled to monitor processes and equipment in the plant, collecting sample data for assessing operational conditions and for predicting maintenance requirements based on loading of the equipment. One or more processors access the sample data and compares present conditions to diagnostic specifications, technical specifications and historical data stored in memory and indexed to equipment subsets and functional operating groups. The information system integrates operations, maintenance, engineering and management interests in a common database of information via network-coupled data terminals. In addition, Palusamy discloses a method and system

for managing internal components of nuclear reactor power plants using a network-based system including a server system coupled to a centralized interactive database and at least one client system, said method comprising the steps of receiving information relating to internal components of a specific plant; storing the information into a centralized database, updating the centralized database with information received, cross-referencing the information received against the specific plant and developing contingency options for repair or migration of specific internal components based on cracking susceptibility of specific components, generating contingency outage schedules for the contingency options, and providing information in response to an inquiry. However, Palusamy does not specifically disclose or teach a method and system for determining cracking susceptibility for specific internal component welds based in information received and information stored in the database, wherein the cracking susceptibility determination is based on a base material of the internal component, a weld filler material, and a weld susceptibility index based on a configuration of a weld and historical information of similar internal components in similar reactors. Thereby, this method and system disclosed by Palusamy fails to anticipate the above bolded unique limitations or render them obvious.

(ii) US 4,908,775 to Palusamy 2 discloses a method and system for discloses a cycle monitoring system and method that acquires, logs and analyzes analog and/or digital signals from component sensors in a process control plant such as a nuclear power plant. The system continuously monitors the sensors and records steady state and



Art Unit: 3625

transient phenomena. The system provides estimates of fatigue accumulation associated with selected locations of critical power plant components. Measurements of plant process and response parameters are used to provide data for calculation of fatigue accumulation. The system includes a computer containing a database that includes thresholds and response characteristics of the plant components to varying types of stress. The process required to calculate fatigue for monitored components and locations uses and the system can be used to plan routine maintenance, repair and replacement decision, and to justify alternative plant operation modes and life extension. In addition, the method and system of Palusamy 2 discloses a method of determining cracking susceptibility for specific internal components based on information received and information stored in a database. However, Palusamy 2 does not specifically disclose or teach a method and system for determining cracking susceptibility for specific internal component welds based in information received and information stored in the database, wherein the cracking susceptibility determination is based on a base material of the internal component, a weld filler material, and a weld susceptibility index based on a configuration of a weld and historical information of similar internal components in similar reactors. Therefore, the method and system disclosed by Palusamy 2 fails to anticipate the above bolded unique limitations or render them obvious.

### **B. Non Patent Literature**

(iii) "Cracks pose threat to nuclear plant"; The Times, London; Dec 8, 1994 (hereafter referred to as "Cracks") discloses the appearance of cracks in welds of a nuclear plant. However, Cracks does not disclose or teach a method and system for managing internal components of nuclear reactor plants using a network-based system including a server system coupled to a centralized interactive database and at least one client system, comprising; determining cracking susceptibility for specific internal component welds based in information received and information stored in the database, wherein the cracking susceptibility determination is based on a base material of the internal component, a weld filler material, and a weld susceptibility index based on a configuration of a weld and historical information of similar internal components in similar reactors. Thereby, the method disclosed by Cracks fails to anticipate the above bolded unique limitations or render them obvious.

### **C. Foreign Patent Literature**

(iv) JP 09044231A to Mitsubishi discloses a system for a controlled system-managing device in a chemical plant for sending controlled system data to a database. However, Mitsubishi does not disclose or teach a method and system for managing internal components of nuclear reactor plants using a network-based system including a server system coupled to a centralized interactive database and at least one client system, comprising; determining cracking susceptibility for specific internal component welds

Art Unit: 3625

based in information received and information stored in the database, wherein the cracking susceptibility determination is based on a base material of the internal component, a weld filler material, and a weld susceptibility index based on a configuration of a weld and historical information of similar internal components in similar reactors. Thereby, this system disclosed by Mitsubishi fails to anticipate the above bolded unique limitations or render them obvious.

### **Conclusion**

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rob Rhode whose telephone number is 571.272.6761. The examiner can normally be reached Monday thru Friday 8:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wynn Coggins can be reached on 571.272.7159.

Any response to this action should be mailed to:

Commissioner for Patents

P.O. Box 1450

Alexandria, Va. 22313-1450

or faxed to:

571-273-8300 [Official communications; including  
After Final communications labeled  
"Box AF"]

For general questions the receptionist can be reached at

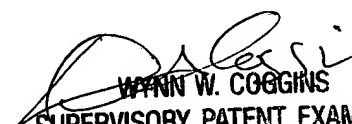
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